

What is claimed is:

1. A recording apparatus for recording video data to a rewritable optical disc, comprising:

encoding means for encoding video data
5 corresponding to a compression-encoding process;
converting means for converting the data structure of the encoded video data received from said encoding means into a file structure that allows a moving picture to be synchronously reproduced by
10 computer software without need to use specially dedicated hardware; and

recording means for recording data having the file structure to an optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being
15 a set of the first data units, and

wherein a plurality of the second data units is matched with a successive record length of which data is written to the optical disc.

20 2. A recording apparatus for recording audio data to a rewritable optical disc, comprising:

converting means for converting the data structure of audio data or encoded audio data into a file structure that allows a moving picture to be
25 synchronously reproduced by computer software without need to use specially dedicated hardware; and

recording means for recording data having the

file structure to an optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

5 wherein a plurality of the second data units is matched with a successive record length of which data is written to the optical disc.

3. A recording apparatus for recording video data and audio data to a rewritable optical disc, comprising:

10 video encoding means for encoding video data corresponding to a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensating process that allow a plurality of frames are structured as a group;

15 audio output means for outputting audio data that has been compression-encoded or non-compressed;

20 multiplexing means for converting the data structure of the encoded video data received from said encoding means and the data structure of the audio data received from said audio output means into respective file structures that allow a moving picture to be synchronously reproduced by computer software without need to use specially dedicated hardware and
25 multiplexing the encoded video data and the audio data; and

recording means for recording the multiplexed

data to an optical disc,

wherein each of the file structures has a first data unit and a second data unit, the second data unit being a set of the first data units, and

5 wherein a plurality of the second data units is matched with a successive record length of which data is written to the optical disc.

4. The recording apparatus as set forth in claim 3,

10 wherein in the multiplexed data, the duration of the encoded video data of the second data unit is almost equal to the duration of the audio data of the second data unit.

15 5. The recording apparatus as set forth in claim 3,

wherein in the multiplexed data, the encoded video data of the second data unit and audio data of the second data unit are alternately arranged, and

20 wherein a plurality of sets of the encoded video data of the second data unit and the audio data of the second data unit are matched with the successive record length.

6. The recording apparatus as set forth in claim 2 ~~or 3~~,
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25 wherein the audio data is compression-encoded corresponding to ATRAC, and

wherein the first data unit of the file

structure contains one or a plurality of sound units.

7. The recording apparatus as set forth in claim

1 ~~or 2,~~
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wherein the file structure further includes a
data portion that describes management information, and
wherein the data portion describes the number
of the second data units contained in the successive
record length.

8. The recording apparatus as set forth in claim
3,

wherein the file structure further includes a
data portion that describes management information, and
wherein the data portion describes a flag and
the number of sets contained in the successive record
length, the flag representing whether or not sets of
encoded video data and audio data of the second data
unit have been recorded in the data portion.

9. A recording method for recording video data
to a rewritable optical disc, comprising the steps of:

encoding video data corresponding to a
compression-encoding process;

converting the data structure of the encoded
video data received at the encoding step into a file
structure that allows a moving picture to be
synchronously reproduced by computer software without
need to use specially dedicated hardware; and

recording data having the file structure to

an optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

5 wherein a plurality of the second data units is matched with a successive record length of which data is written to the optical disc.

10. A recording method for recording audio data to a rewritable optical disc, comprising the steps of:

10 converting the data structure of audio data or encoded audio data into a file structure that allows a moving picture to be synchronously reproduced by computer software without need to use specially dedicated hardware; and

15 recording data having the file structure to an optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

20 wherein a plurality of the second data units is matched with a successive record length of which data is written to the optical disc.

11. A recording method for recording video data and audio data to a rewritable optical disc, comprising the steps of:

25 encoding video data corresponding to a compression-encoding process in a combination of an

inter-frame predictive encoding process and a motion compensating process that allow a plurality of frames are structured as a group;

outputting audio data that has been
5 compression-encoded or non-compressed;

converting the data structure of the encoded
video data received at the encoding step and the data
structure of the audio data received at the outputting
step into respective file structures that allow a
10 moving picture to be synchronously reproduced by
computer software without need to use specially
dedicated hardware and multiplexing the encoded video
data and the audio data; and

recording the multiplexed data to an optical
disc,
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wherein each of the file structures has a
first data unit and a second data unit, the second data
unit being a set of the first data units, and

wherein a plurality of the second data units
20 is matched with a successive record length of which
data is written to the optical disc.

12. A record medium on which a program for
recording video data to a record medium has been
recorded, the program causing a computer to perform the
25 steps of:

encoding video data corresponding to a
compression-encoding process;

converting the data structure of the encoded video data received at the encoding step into a file structure that allows a moving picture to be synchronously reproduced by computer software without need to use specially dedicated hardware; and

recording data having the file structure to an optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

wherein a plurality of the second data units is matched with a successive record length of which data is written to the optical disc.

13. A record medium on which a program for recording audio data to a record medium has been recorded, the program causing a computer to perform the steps of:

converting the data structure of audio data or encoded audio data into a file structure that allows a moving picture to be synchronously reproduced by computer software without need to use specially dedicated hardware; and

recording data having the file structure to an optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

wherein a plurality of the second data units is matched with a successive record length of which data is written to the optical disc.

14. A record medium on which a program for recording video data and audio data to a record medium has been recorded, the program causing a computer to perform the steps of:

encoding video data corresponding to a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensating process that allow a plurality of frames are structured as a group;

outputting audio data that has been compression-encoded or non-compressed;

converting the data structure of the encoded video data received at the encoding step and the data structure of the audio data received at the outputting step into respective file structures that allow a moving picture to be synchronously reproduced by computer software without need to use specially dedicated hardware and multiplexing the encoded video data and the audio data; and

recording the multiplexed data to an optical disc,

wherein each of the file structures has a first data unit and a second data unit, the second data unit being a set of the first data units, and

wherein a plurality of the second data units
is matched with a successive record length of which
data is written to the optical disc.

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recorded and information that represents the number of
chunks or sets included in the successive record length
are recorded in a managing portion, a track on which
chunks are successively recorded can be easily
5 obtained.

Although the present invention has been shown
and described with respect to a best mode embodiment
thereof, it should be understood by those skilled in
the art that the foregoing and various other changes,
omissions, and additions in the form and detail thereof
10 may be made therein without departing from the spirit
and scope of the present invention.